

- I. Claims 1-17, drawn to a method for preparing a nucleic acid microchip, classified in class 536, subclass 23.1
- II. Claims 18-34, drawn to a nucleic acid microchip, classified in class 435, subclass 287.2.

Examiner states that the inventions are distinct, each from the other because:

Inventions I and II are related as a process of making and the product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.04(f)). In the instant case the product as claimed can be made by another and materially different processes e.g. the microchip can be made by chemical synthesis; the microchip can be made by creating a mother plate comprising double-stranded nucleic acids, adding a denaturing solution to the mother plate and transferring via pipette denatured nucleic acids from the mother plate onto a daughter plate.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

*Office Action of May 22, 2002, page 2.*

Applicants respectfully respond as follows:

Applicants have amended claim 18 such that the product as claimed i.e., the nucleic acid microchip, is made by the method of claim 1. Therefore, the instant claims 1-34 now read on a process that is used to make a specific product, and the product as claimed is made by a specific process. As such, the inventions are no longer distinct and therefore, restriction is not proper.

#### CONCLUSION

The Applicants have addressed all of the Examiner's rejections. If any questions or issues remain in the resolution of which the Examiner feels will be advanced by a conference with the Applicants' attorney, the Examiner is invited to contact the attorney at the number noted below.

The one-month period expires on June 22, 2002. Since this Response is filed within the one-month time limit, no extension of time is necessary. Therefore, no fees are due as a result of this Response. The Assistant Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account 10-0447, reference number 45687-

00060.

Respectfully submitted,

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## Appendix A

### Marked-up Copy of Amended Claims

18. (Amended) A nucleic acid microchip prepared by [a] the method of claim 1 comprising:  
attaching nucleic acid molecules to a first surface of a first chip, and  
contacting said first surface of said first chip with a first surface of a second chip.

## Appendix B

### Clean Copy of Pending Claims

- A
1. A method for preparing nucleic acid microchips comprising:  
attaching nucleic acid molecules to a first surface of a first chip, and  
contacting said first surface of said first chip with a first surface of a second chip.
  2. The method of claim 1, wherein the nucleic acid molecules are DNA.
  3. The method of claim 1, wherein the nucleic acid molecules are RNA.
  4. The method of claim 1, wherein the first surface of the second chip is in a relatively liquid state.
  5. The method of claim 1, wherein the first surface of the second chip comprises a rubber material.
  6. The method of claim 1, wherein the first surface of the second chip comprises an acrylamide layer.
  7. The method of claim 1, wherein the first surface of the first chip comprises a nucleic acid surface density of at least 50 pmoles/ cm<sup>2</sup>, more preferably ranging from 50-2000 pmoles/ cm<sup>2</sup>, and most preferably greater than 2000 pmoles/ cm<sup>2</sup>.
  8. The method of claim 1, wherein the nucleic acid molecules are attached to the first surface of the first chip by disulphide bonds.
  9. The method of claim 1, wherein the printing temperature is 25°C.
  10. The method of claim 1, wherein the printing temperature ranges from 25°C -100°C.
  11. The method of claim 1, wherein the printing temperature is 95°C, more preferably 99°C, and most preferably 100°C.
  12. The method of claim 1, wherein the printing temperature is at least 30°C.
  13. The method of claim 1, wherein the printing time varies from about 10 seconds to about 10 minutes.
  14. The method of claim 1, wherein the printing time is at least 15 seconds.
  15. The method of claim 1, wherein the number of print chips generated from a single master chip ranges from 2-200 print chips.
  16. The method of claim 1, wherein the number of print chips generated from a single master chip is at least two.

17. The method of claim 1, wherein the nucleic acid is RNA or DNA.
18. (Amended) A nucleic acid microchip prepared by the method of claim 1 comprising:  
attaching nucleic acid molecules to a first surface of a first chip, and  
contacting said first surface of said first chip with a first surface of a second chip.
19. The microchip of claim 18, wherein the nucleic acid molecules are DNA.
20. The microchip of claim 18, wherein the nucleic acid molecules are RNA.
21. The microchip of claim 18, wherein the first surface of the second chip is in a relatively liquid state.
22. The microchip of claim 18, wherein the first surface of the second chip comprises a rubber material.
23. The microchip of claim 18, wherein the first surface of the second chip comprises an acrylamide layer.
24. The microchip of claim 18, wherein the first surface of the first chip comprises a nucleic acid surface density of at least 50 pmoles/ cm<sup>2</sup>, more preferably ranging from 50-2000 pmoles/ cm<sup>2</sup>, and most preferably greater than 2000 pmoles/ cm<sup>2</sup>.
25. The microchip of claim 18, wherein the nucleic acid molecules are attached to the first surface of the first chip by disulphide bonds.
26. The microchip of claim 18, wherein the printing temperature is 25°C.
27. The microchip of claim 18, wherein the printing temperature ranges from 25°C -100°C.
28. The microchip of claim 18, wherein the printing temperature is 95°C, more preferably 99°C, and most preferably 100°C.
29. The microchip of claim 18, wherein the printing temperature is at least 30°C.
30. The microchip of claim 18, wherein the printing time varies from about 10 seconds to about 10 minutes.
31. The microchip of claim 18, wherein the printing time is at least 15 seconds.
32. The microchip of claim 18, wherein the number of print chips generated from a single master chip ranges from 2-200 print chips.

A)  
continued

33. The microchip of claim 18, wherein the number of print chips generated from a single master chip is at least two.

34. The microchip of claim 18, wherein the nucleic acid is RNA or DNA.

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